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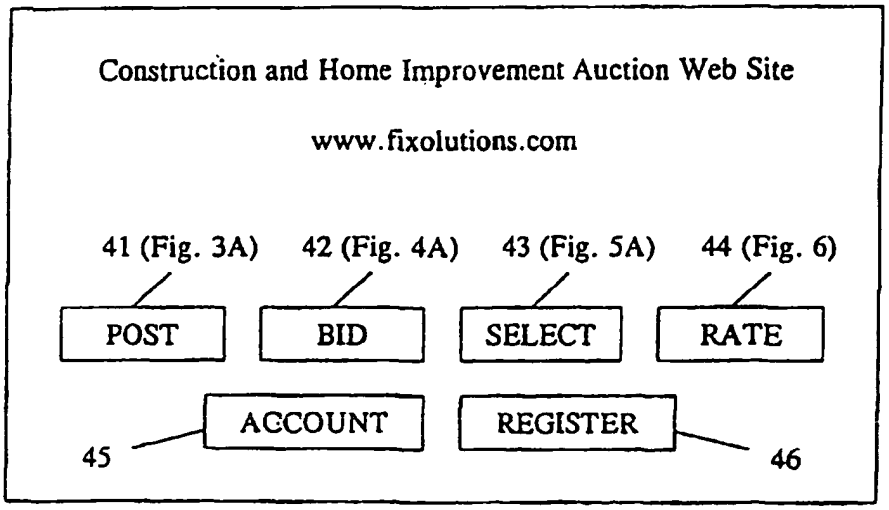

(57) Abstract: An on-line auction system, implemented on a web site, adds value and efficiency to the construction and home improvement outsourcing process. The web site manages the entire bidding (42) process for the construction and home improvement projects, including the steps of receiving the job requests from homeowners and posting them on the web site for bidding, receiving the bids from contractors, and processing the bid selection made by the homeowners.

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ON-LINE AUCTION SYSTEM FOR CONSTRUCTION AND HOME IMPROVEMENT PROJECTS

TECHNICAL FIELD

The invention relates generally to an on-line auction system and, more particularly, to an on-line auction system for construction and home improvement projects, implemented on a web site, that manages the entire bidding process for the construction and home improvement projects.

BACKGROUND ART

Every year, several hundred billions of dollars are spent on construction and home improvement projects. A large percentage of such construction and home improvement projects are outsourced to suppliers, but the channels of information and distribution in the construction and home improvement in outsourcing market remain inefficient and dispersed.

In general, existing services for the construction and home improvement outsourcing market, including some services that are available on-line, have failed to add value and efficiency to the outsourcing process. For consumers and businesses, the existing on-line services have focused on the information, but not the pricing, element of the outsourcing process. For contractors, the existing on-line services offer merely another channel of advertisement by placing them at a reactive end of the outsourcing process.

DISCLOSURE OF THE INVENTION

An object of this invention is to provide a system that adds value and efficiency to the construction and home improvement outsourcing process. This object is achieved

with an on-line auction system, implemented on a web site, that manages the entire bidding process for the construction and home improvement projects, including the steps of receiving the job requests from homebuilders, contractors, or homeowners and posting them on the web site for bidding, receiving bids on the posted job requests from contractors, and processing the bid selection made by the homebuilders, contractors, or homeowners.

Additional objects, features and advantages of the invention will be set forth in the description of preferred embodiments which follows.

BRIEF DESCRIPTION OF THE DRAWING

The invention is described in detail herein with reference to the drawings in which:

Figure 1 is a schematic illustration of an on-line auction network;

Figure 2 is a sample display of the homepage of the construction and home improvement auction web site;

Figures 3A and 3B are sample displays shown to a party submitting a construction or home improvement project for bids;

Figures 4A and 4B are sample displays shown to a party submitting a bid on one of the construction and home improvement projects placed on auction;

Figure 5A is a sample display shown to a party inquiring about a status of a construction or home improvement project that he or she submitted for bids;

Figure 5B is a sample display shown to a party inquiring about a rating on a bidder; and

Figure 6 is a sample display showing a form that a job requestor uses to input comments on a contractor that he or she previously employed.

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate presently preferred exemplary embodiments of the invention, and, together with the general description given above and the detailed description of the preferred embodiments given below, serve to explain the principles of the. invention.

BEST MODE FOR CARRYING OUT THE INVENTION

Figure 1 illustrates a network of computers connected over the Internet 10. The network of computers includes a server computer 20 that hosts 30 or manages an on-line auction web site and a plurality of client computers. The auction web site includes a homepage and a plurality of other pages that are described below. All of the auction web site pages can be displayed at the client computers 30 using a conventional browser program, for example, Netscape Navigator or Internet Explorer.

Figure 2 illustrates the homepage of the on-line auction web site as displayed on one of the client computers 30. A visitor to this homepage is given a choice of six hyperlinks -- the POST hyperlink 41, the BID hyperlink 42, the SELECT hyperlink 43, the RATE hyperlink 44, the ACCOUNT hyperlink 45, and the REGISTER hyperlink 46.

The selection of the POST hyperlink 41 displays the page illustrated in Figure 3A. This display prompts the visitor for information about the construction or home improvement job that he or she would like to put up for bid. Specifically, the display prompts the visitor for the job category, the job location, the job deadline, and the bid

deadline. The job category is selected from a plurality of predefined categories and is selected using a drop-down menu, for example indicated at 50. The predefined categories include painting, papering, flooring, furnace maintenance, remodeling, decks/porches/terraces, heating, plumbing, electrical work, HVAC, siding, roofing, flooring, windows/doors, inside additions/alterations, outside additions/alterations, major replacements, mowing, paving, tree-trimming, hedges, pool-cleaning, supplies, etc. These categories are given by way of example and not to be limiting. The job location is also selected from a plurality of predefined locations using a drop-down. menu indicated at 51 and defined by zip code. The job deadline is the desired completion date for the construction or home improvement project. The bid deadline is the date by which all bids on the construction or home improvement project must be submitted.

Once these inputs have been specified and submitted using a SUBMIT control button 52, the screen of Figure 3B is displayed to the visitor. Alternatively, the user may click on a RESET control button 53 to clear all inputs without submitting them and to display the screen of Figure 3A again.

The display of Figure 3B includes a customized set of questions for the job category that the homeowner has selected. In this example, where the visitor specified painting as the job category, the customized set of questions prompts the visitor to specify: inside or outside, color of the paint, water-based or oil-based, total area or volume of the job, etc. The paint color may be specified using a drop-down menu indicated at 54, and one of the menu items 5 may display a pallet for customized color selection.

The visitor is also asked for a credit card number as a confirmation of this job request. A hyperlink 55 is also provided to a Product/Ideas Gallery where the visitor can browse and view photographs of products, ideas, and sample configurations, select from them, and bring back the selections to include in the job request using a pseudo "shopping cart" method. The visitor also has an option of attaching drawings or blueprints for the construction or home improvement project using a button 57. These drawings or blueprints will be made available to the bidders for evaluation by them prior to bidding.

When the above process is completed, the job request is posted for bidding using the SUBMIT control button 56. If multiple job categories are desired, the visitor clicks control button 58 to cycle back to Figure 3A where these new categories, and new (or the same) location and deadlines may be entered.

The above-described process for posting a construction or home improvement project for bids is carried out by the server computer and one of the client computers 30. The web pages, including the data files for generating the homepage, the displays of Figures 3A and 3B, and other customized displays associated with other predefined job categories, are stored at the server computer 20, and transmitted over the Internet 10 for display at the client computer 30. The inputs are specified using the client computer 30 and transmitted from there to the server computer 20 over the Internet 10.

The selection of the BID hyperlink 42 (Figure 2) displays the page illustrated in Figure 4A (bid screen). This page is accessible to anyone, but only bidders who have registered with and have been pre-approved by the web site

may submit bids for the listed jobs. Registration and pre-approval of the bidders are necessary so that background and other qualitative checks can be conducted on the potential bidders ahead of time to compile the qualitative information that is used in the selection process. Upon registration and preapproval, each bidder is assigned an identification (ID) number.

The web server application will also assign a unique ID number to a job submitted for bids and store all bid information in a database management system on the server 20. The bid screen lists the job ID number of the construction or home improvement project along with its job category, its location defined by zip code, the job deadline, the bid deadline, and the lowest current bid. The identities and addresses of the job requestors are not revealed until a job is awarded. This feature prevents the bidders from circumventing the auction web site and dealing with the job requestors directly.

Each construction or home improvement project ID number is hyperlinked to another page which details the information about that project. The detailed page associated with the first construction or home improvement project listed in Figure 4A is illustrated in Figure 4B. The detailed page provides a description of the construction or home improvement project with greater specificity and is assembled automatically by the auction web site based on the answers to the customized set of questions submitted by the job requestor of this construction or home improvement project. The detailed page also includes an area where a bid may be specified and submitted. The required inputs are the username or ID number of the bidder in field 60 and the bid price in field 62.

The above-described process for managing the bid submissions is carried out by the server computer 20 and one of the client computers 30. The web pages, including the data files for generating the displays of Figures 4A and 413, 25 and other detailed displays associated with other jobs placed on auction, are stored at the server computer 20, and transmitted over the Internet 10 for display at the client computer 30. The inputs are specified using the client computer 30 and transmitted from there to the server computer 20 over the Internet 10.

Throughout the bidding process, a party who submitted a construction or home improvement project for bids may access a page illustrated in Figures 5A and 513, which provides a current status of the auction, using the SELECT hyperlink 43 on the homepage (Figure 2). Access to this page is restricted to the requestor of the particular job. This page identifies the bidders who have submitted a bid on this project, and their respective locations, qualitative ratings, and bids. Each bidder is hyperlinked to a web page which provides a profile of that bidder, an example of which is illustrated in Figure 5B. The qualitative rating is based on the background and other qualitative checks conducted by the auction web site provider and the comments received by the web site about the bidders on past jobs. The history record, such as "No. of jobs" may be hyperlinked to a listing of job types and locations. Hyperlinks may also be provided to give further details on the "commendation," "complaints," etc.

If the bid deadline has passed, any one of the identified bidders may be selected and submitted by the bid poster. Upon selection and submission, the selected bidder is notified by the web site provider. Also, it is preferable

that the on-line auction web site be paid at this time. One way to handle the payment is for a percentage of the bid price be paid by the selected bidder in exchange for the job requestor's identity and address. As a way to simplify the payment transaction and to assure that the auction provider gets paid, this payment may be made by the job requestor on behalf of the selected bidder using the job requestor's credit card number that was used to confirm the job request. Alternatively, bidders may set up a line of credit through CyberCash and make payments automatically to the auction provider upon winning a bid using this line of credit.

The above-described process for managing the bid selection is carried out by the server computer 20 and one of the client computers 30. The web pages, including the data files for generating the display of Figures 5A and 5B, the displays showing the status of bids on other construction or home improvement projects, and displays showing the qualitative ratings of the bidders, are stored at the-server computer 20, and transmitted over the Internet 10 for display at the client computer 30. The inputs are specified using the client computer 30 and transmitted from there to the server computer 20 over the Internet 10.

In the above example, the submission of the construction or home improvement project is not limited to a homebuilder, a homeowner, or a renter. A general contractor, which may be individuals or businesses, may submit job requests for subcontractors to bid on. In fact, any contractor who has a construction or home improvement job may submit smaller portions of his or her job for bids by subcontractors. In certain situations, a contractor who is currently bidding on a work request through this web site may submit smaller portions of his or her job for bids by

other contractors. For example, if the contractor is currently bidding on a remodeling job for a house, this contractor may initially submit a fairly conservative, middle of the road bid. Then, as a way to reduce the bid price, the contractor may post one or more subsets of the remodeling work, for example, painting, flooring, siding, roofing, etc., for bids by other subcontractors, and resubmit a bid on the remodeling work at a lower price based on the bids that he or she receives for the subset projects.

The on-line auction system described above is also applicable to procurement of material, equipment, and/or supplies. For example, a contractor submits a description of a particular material that he or she needs to complete a job to the auction web site. The web site posts this procurement request for bids. The bids are received and the contractor selects a supplier based on these bids and/or the qualitative rating of the suppliers. If the contractor submitted the procurement request for a prospective job that he or she is currently bidding on, the contractor may, with the bid price on the supplies, submit a lower bid on the prospective job that he or she is currently bidding on. Thus, in Figure 4A, the lumber bid (ID No. 1004) may have been submitted by a contractor who is also a bidder for the remodeling job (ID No. 1003) submitted by a homeowner. The contractor may use the low bid it receives on 08/22/99 to make a new and lower bid for the remodeling job of the homeowner, which bid closes after the lumber bid deadline.

The selection of the RATE hyperlink 44 (Figure 2) displays the page illustrated in Figure 6. This page provides an area for inputting comments on the bidders who have won bids through this web site. It asks the rating party for the identity of the bidder being rated and a

series of YES or NO questions. A text field is also provided for inputting detailed comments should the rating party wish to file a complaint against the bidder. This page is also password protected.

These comments will be used to generate the qualitative ratings on the bidders. In addition, the qualitative ratings of the bidders will be based on an ongoing review of the bidders as conducted by the auction web site provider. The ongoing review includes periodic LLCI (Legal Checks and Credit History) review via relevant agencies, and periodic surveys and disclosures requested by the auction web site provider.

The above-described process for managing the rating inputs is carried out by the server computer 20 and one of the client computers 30. The web pages, including the data file for generating the display of Figure 6, are stored at the server computer 20, and transmitted over the Internet 10 for display at the client computer 30. The-inputs are specified using the client computer 30 and transmitted from there to the server computer 20 over the Internet 10.

The selection of the ACCOUNT hyperlink 45 (Figure 2) prompts the visitor for an ID number and password. Upon verification of this information, a list or portfolio of open bids that the visitor is participating in and/or open job requests that the visitor has submitted is displayed to the visitor. The open bids are hyperlinked to the corresponding bid submission page described in connection with Figure 4B and the open job requests are hyperlinked to the corresponding bid selection page described in connection with Figure 5A.

The selection of the REGISTER hyperlink 46 (Figure 2) prompts the visitor for registration information, such as

name and other contact information. Upon verification of the registration information, and background investigation if the visitor registers as a bid submitter also, the visitor is assigned an ID number and a password that the visitor selects, which are used as needed during the bidding process outlined above.

The auction web site also provides notice to the bidders whenever they are underbid on a project. This notice is provided real-time, i.e., immediately in response to a submission of the lower bid, over the Internet by e-mail or by wireless communication using a two-way pager, and/or a personal digital assistant (PDA), e.g., Palm Pilot 7.0. The bidder who has been underbid may then respond in real-time with a lower bid using his or her computer, two-way pager, or PDA.

While particular embodiments according to the invention have been illustrated and described above, it will be clear that the invention can take a variety of forms and embodiments within the scope of the appended claims.

I CLAIM:

1. A method of posting a job request for bids, comprising the steps of:

receiving a description of the job request from a requesting party's computer over the Internet;

selecting a set of questions corresponding to the description and

displaying the questions at the requesting party's computer;

receiving answers to the questions from the requesting party's computer over the Internet; and

storing a summary of the job request based on the description and the answers in a data file accessible by bidders over the Internet.

2. The method according to claim 1, wherein the request includes a job request relating to a component of a construction or home improvement project.

3. The method according to claim 1, further comprising the steps of:

receiving information on a location where the job is to be performed, from the requesting computer over the Internet; and

storing the location information with the summary in the data file.

4. The method according to claim 1, wherein the description specifies a predefined construction or home improvement project category and the set of questions is customized to that category.

5. A method of managing an auction for a contract on a construction or home improvement project, comprising the steps of:

receiving a description of the construction or home improvement project from a contracting party over the Internet;

storing a summary of the construction or home improvement job request based on the description in a first data file accessible by bidders over the Internet;

receiving bids from the bidders over the Internet; and

receiving a selection of one of the bidders from the contracting party over the Internet.

6. The method according to claim 5, further comprising the step of receiving payment from the bidding party based on a bid price of the selected bidder.

7. The method according to claim 5, further comprising the steps of:

selecting a set of questions corresponding to the description and transmitting the questions to the contracting party over the Internet;

receiving answers to the questions from the contracting party over the Internet; and

preparing the summary based on the description and the answers.

8. The method according to claim 7, further comprising the step of storing information about the bidders in a second data file accessible by the contracting party over the Internet.

9. The method according to claim 8, further comprising the step of storing a summary of bids submitted by the bidders in a third data file accessible by the contracting party over the Internet.

10. The method according to claim 5, wherein an identity of the contracting party is not known to the bidders.

11. The method according to claim 5, further comprising the steps of receiving qualitative ratings on the bidders over the Internet and preparing the information about the bidders based on the qualitative ratings.

12. The method according to claim 11, wherein the qualitative ratings are based on performance evaluations submitted by prior contracting parties.

13. The method according to claim 5, wherein the description specifies a predefined construction or home improvement project category and the set of questions is customized to that category.

14. The method according to claim 5, further comprising the step of notifying a low bidder when the low bidder is underbid.

15. The method according to claim 14, wherein the step of notifying is by wireless communication.

16. The method according to claim 15, further comprising the step of receiving another bid from the underbid low bidder by wireless communication.

17. An on-line auction network comprising:

a server computer hosting an auction of a construction or home improvement job;

a job requesting computer, connected to the server computer over the Internet, and specifying a description of the construction or home improvement job and transmitting the description to the server computer over the Internet; and

a bidding computer, connected to the server computer over the Internet, and specifying a bid on the

construction or home improvement job and transmitting the bid to the server computer over the Internet.

18. The on-line auction network according to claim 17, further comprising a second bidding computer, connected to the server computer over the Internet, and specifying a second bid on the construction or home improvement job and transmitting the second bid to the server computer over the Internet.

19. The on-line auction network according to claim 18, wherein the job requesting computer selects a single bid from the two bids and transmits the selected bid to the server computer over the Internet.

20. The on-line auction network according to claim 19, wherein the server computer is programmed to generate a first data file from the description of the construction or home improvement job received over the Internet, the first data file being accessible by the two bidding computers, but not by the job requesting computer.

21. The on-line auction network according to claim 20, wherein the server computer is programmed to generate a second data file from the two bids received over the Internet, the second data file being accessible by the job requesting computer, but not by the two bidding computers.

22. The on-line auction network according to claim 21, wherein the first bidding computer specifies a description of a second construction or home improvement job and transmits the description to the server computer over the Internet and the server computer updates the first data file to include the description of the second construction or home improvement job.

23. The on-line auction network according to claim 22, further comprising a third bidding computer, connected to

the server computer over the Internet, and specifying a bid on the second construction or home improvement job and transmitting the bid on the second construction or home improvement job to the server computer over the Internet.

24. The on-line auction network according to claim 23, wherein the server computer is programmed to generate a third data file from the bid on the second construction or home improvement job received over the Internet, the third data file being accessible by the first bidding computer, but not by the job requesting computer or the other two bidding computers.

25. The on-line auction network according to claim 24, wherein the first bidding computer submits another bid on the first construction or home improvement job based on the bid on the second construction or home improvement job by the third bidding computer.

26. The on-line auction network according to claim 21, wherein the first bidding computer specifies a description of a material needed for the first construction or home improvement job and transmits the description to the server computer over the Internet and the server computer updates the first data file to include the description of the material.

27. The on-line auction network according to claim 26, further comprising a third bidding computer, connected to the server computer over the Internet, and specifying a bid on the material and transmitting the bid on the material to the server computer over the Internet.

28. The on-line auction network according to claim 27, wherein the server computer is programmed to generate a third data file from the bid on the material received over the Internet, the third data file being accessible by the

first bidding computer, but not by the job requesting computer or the other two bidding computers.

29. The on-line auction network according to claim 28, wherein the first bidding computer submits another bid on the first construction or home improvement job based on the bid on the material by the third bidding computer.

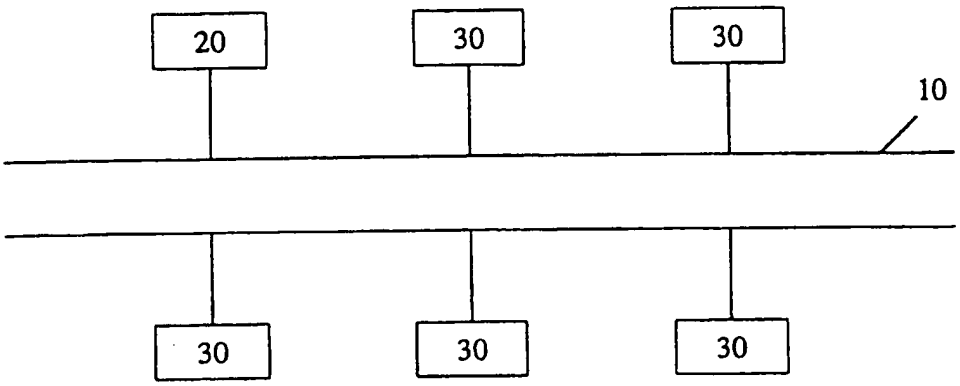


FIGURE 1

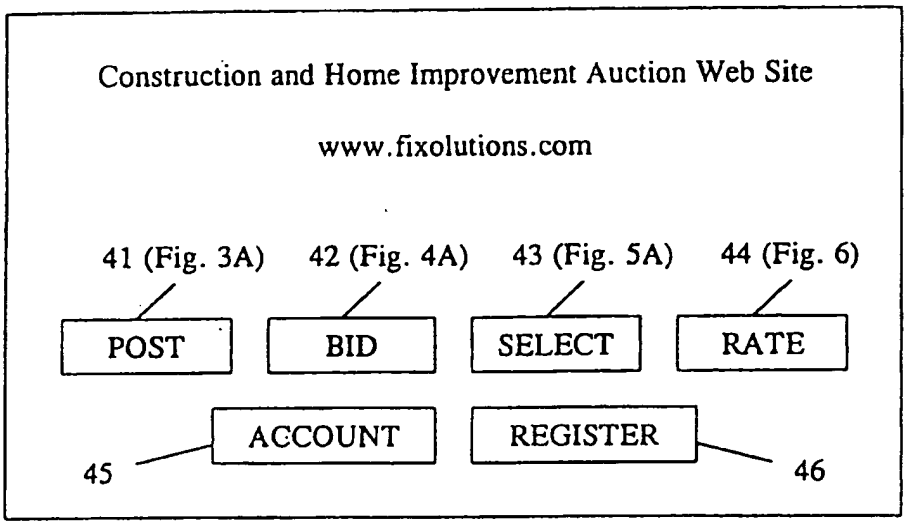


FIGURE 2

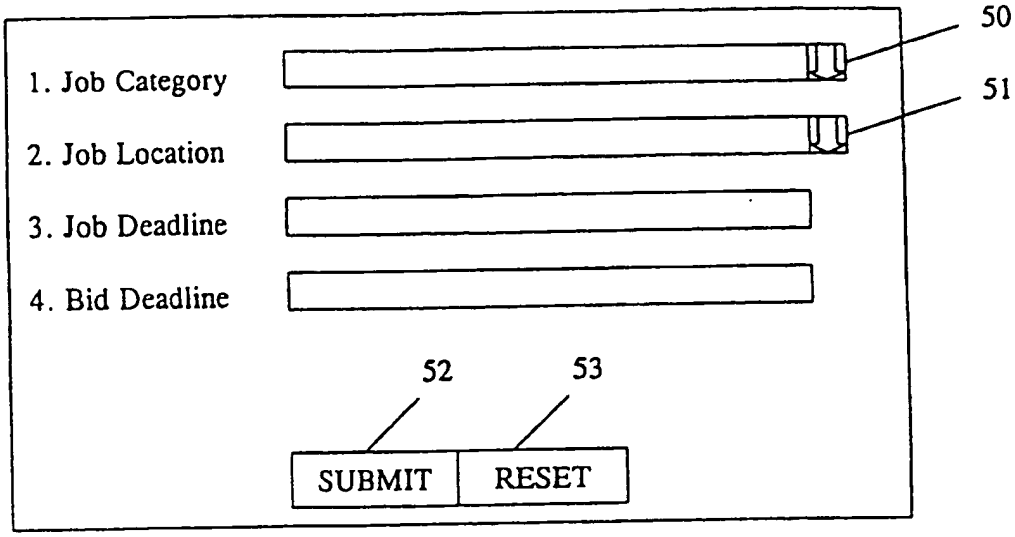


FIGURE 3A

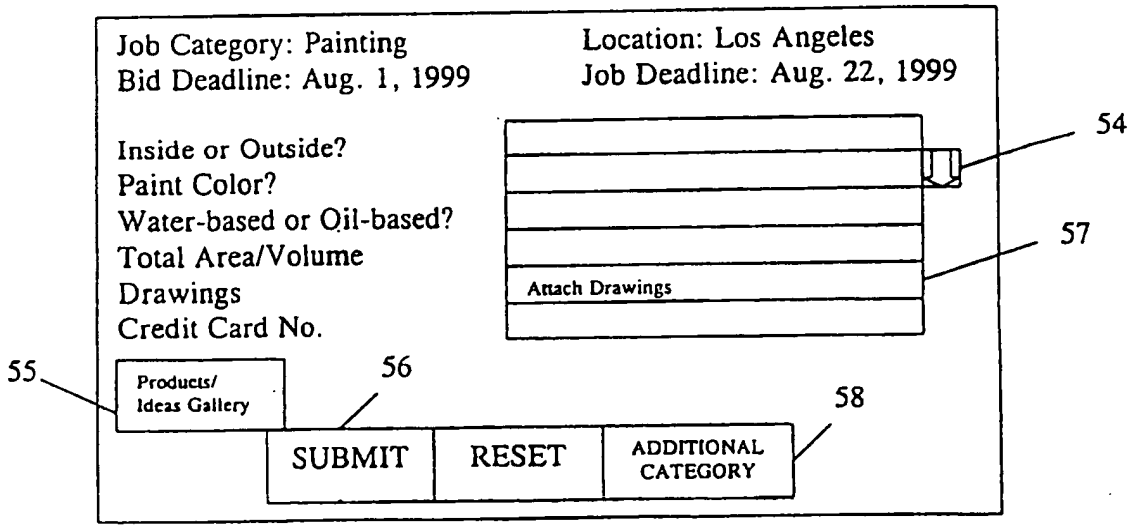


FIGURE 3B

Select a job for bidding:

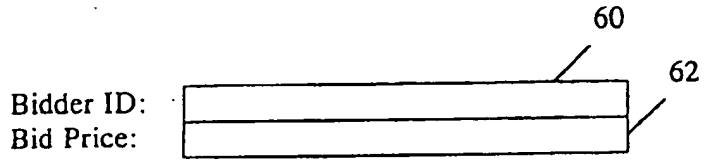
ID no.	Job Category	Job Location	Bid Deadline	Job Deadline	Low Bid
1001	Painting	90067	08-01-99	08-22-99	$1200
1002	Flooring	10024	08-11-99	08-31-99	$2500
1003	Remodeling	20007	08-23-99	10-31-99	$25000
1004	Lumber	20007	08-22-99	10-31-99	$3000

SUBMIT RESET

FIGURE 4A

Job ID No. 1001 Job Category: Painting Location: 90067
Bid Deadline: Aug. 1, 1999 Job Deadline: Aug. 22, 1999

Detailed Description
Inside job, white color, water-based, 1000 sq. ft.



SUBMIT RESET

FIGURE 4B

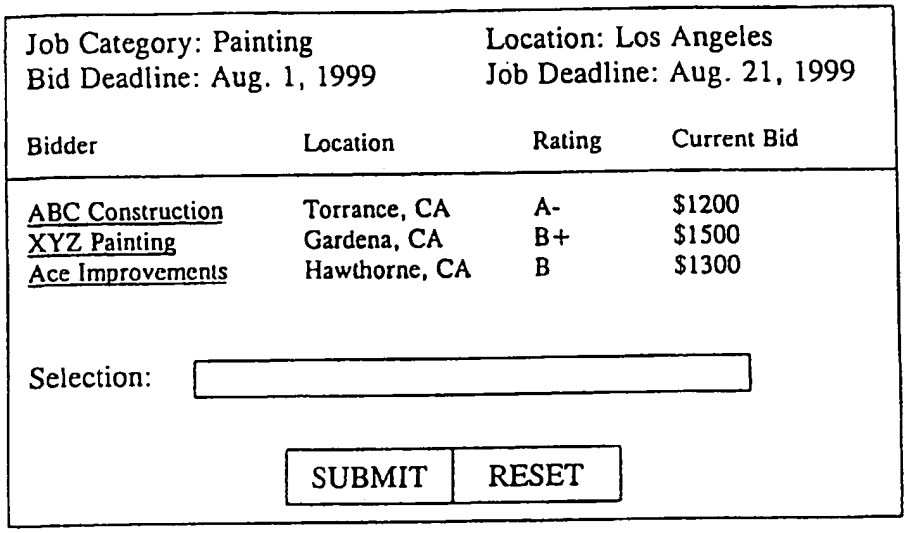


FIGURE 5A

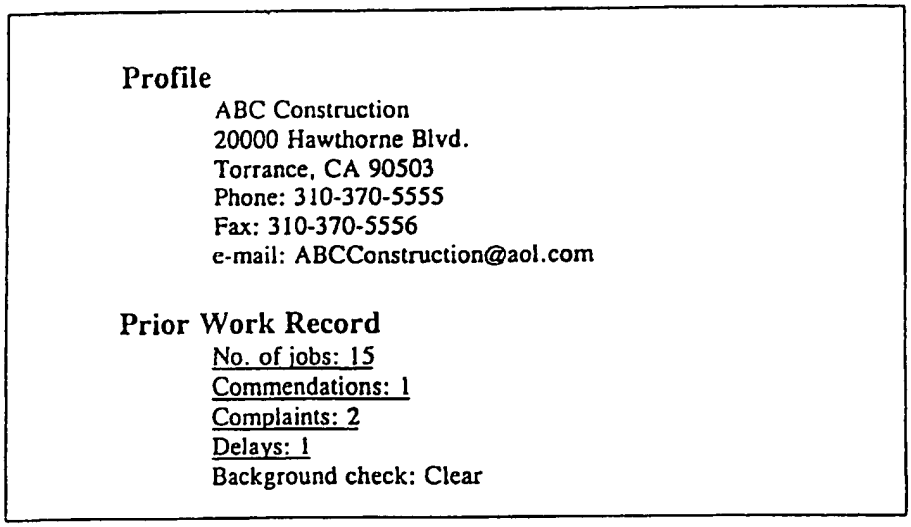


FIGURE 5B

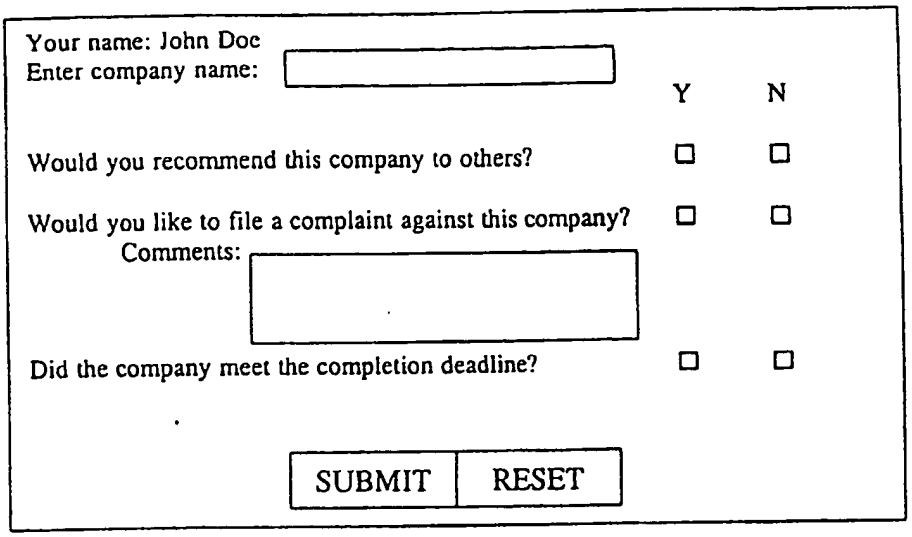

Your name: John Doe
Enter company name:
Y
N
Would you recommend this company to others?
Would you like to file a complaint against this company?
Comments:
Did the company meet the completion deadline?
SUBMIT
RESET

FIGURE 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/21568

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G06F 17/60
US CL : 705/37

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/37

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WEST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,890,138 A (GODIN et al) 30 March 1999 col 1 lines 60-62;col 2 lines 39-48;col 2 lines 3-14; col 1 lines 43-45;col 3 line 61-col 4 line 9;Fig 2/72; col 4 lines 36-37;col 5 lines 41-46; col 4 lines 28-32;col 5 lines 1-6;Fig. 6;col 6 lines 37-60 col 5 lines 62-65; col 7 lines 55-59;Fig 10/142;Fig 11/160;Fig 1;Fig 2;Fig 3/122	1-29
Y,P	US 5,966,699 A (ZANDI et al) 12 October 1999, col 9 lines 8-18;Fig 4B/140/145;Fig 4A/120;col 9 lines 2-8; Fig 4B/135; col 7 lines 27-48;Fig 4B/150/155; col 9 line 55-col 10 line 2; col 9 lines 44-48;Fig 2/50	18-29

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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Date of the actual completion of the international search	Date of mailing of the international search report
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